

Figure 1 : Alignment of N-terminal fragments of Human Hedgehog Proteins

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Indian	CGPGRVVGSR	RRPPRK-LVP	LAYKQFSPNV	PEKTLGASGR	YEGKIARSSE
Sonic	CGPGRGFG-K	RRHPKK-LTP	LAYKQFIPNV	AEKTLGASGR	YEGKISRNSE
Desert	CGPGRGPVGR	RRYARKQLVP	LLYKQFVPGV	PERTLGASGP	AEGRVARGSE

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Indian	RFKELTPNYN	PDIIFKDEEN	TGADRLMTQR	CKDRLNSLAI	SVMNQWPGVK
Sonic	RFKELTPNYN	PDIIFKDEEN	TGADRLMTQR	CKDKLNALAI	SVMNQWPGVK
Desert	RFRDLVPNYN	PDIIFKDEEN	SGADRLMTER	CKERVNALAI	AVMNMWPGVR

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Indian	LRVTEGWDED	GHHSEESLHY	EGRAVDITTS	DRDRNKYGLL	ARLAVEAGFD
Sonic	LRVTEGWDED	GHHSEESLHY	EGRAVDITTS	DRDRSKYGML	ARLAVEAGFD
Desert	LRVTEGWDED	GHHAQDSLHY	EGRALDITTS	DRDRNKYGLL	ARLAVEAGFD

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Indian	WVYYESKAHV	HCSVKSEHSA	AAKTGG	SEQ ID NO: 23
Sonic	WVYYESKAHI	HCSVKAENSV	AAKSGG	SEQ ID NO: 24
Desert	WVYYESRNHV	HVSVKADNSL	AVRAGG	SEQ ID NO: 25

Gap(s), indicated by -, added to facilitate alignment

Figure 2: SEQ ID NO: 26 is the consensus sequence of a hedgehog protein suitable for use in developing the conjugated proteins of the invention, antagonist, where "Xaa" indicates amino acids that differ between the Sonic, Indian and Desert hedgehog proteins.

C\* G P G R Xaa1 Xaa2 Xaa3 Xaa4 Xaa5 R R Xaa6 Xaa7 Xaa8 K Xaa9 L Xaa10 P  
L Xaa11 Y K Q F Xaa12 P Xaa13 V Xaa14 E K T L G A S G R  
Xaa15 E G K Xaa16 Xaa17 R Xaa18 S E R F K Xaa19 L Xaa20 P N Y N  
P D I I F K D E E N Xaa21 G A D R L M T Xaa22 R  
C K Xaa23 Xaa24 Xaa25 N S L A I Xaa26 V M N Xaa27 W P G V K  
L R V T E G W D E D G H H Xaa28 Xaa29 Xaa30 S L H Y  
E G R A V D I T T S D R D R Xaa31 K Y G Xaa32 L  
A R L A V E A G F D W V Y Y E S Xaa33 Xaa34 H Xaa35  
H Xaa36 S V K Xaa37 Xaa38 Xaa39 S Xaa40 A A Xaa41 Xaa42 G G

Where

C\* is a cysteine that may be modified, altered or substituted within another moiety or series of moieties as described herein;

Xaa1 is either V or G;	Xaa2 is either V, E or P	Xaa3 is either G or V
Xaa4 is either S or G;	Xaa5 is either R or K;	Xaa6 is either P, H or Y;
Xaa7 is either P or A;	Xaa8 is either R or K;	Xaa9 is any amino acid;
Xaa10 is either V or T;	Xaa11 is either A or L;	
Xaa12 is either S, I or V;	Xaa13 is either N or G;	Xaa14 is either P or A;
Xaa15 is either Y or A;	Xaa16 is either I or V;	Xaa17 is either A or S;
Xaa18 is either S, N or G;	Xaa19 is either E or D;	Xaa20 is either T or V;
Xaa21 is either T or S;	Xaa22 is either Q or E;	Xaa23 is either D or E;
Xaa24 is either R or K;	Xaa25 is either L or V;	Xaa26 is either S or A;
Xaa27 is either Q or M;	Xaa28 is either S or A;	Xaa29 is either E or Q;
Xaa30 is either E or D;	Xaa31 is either N or S;	Xaa32 is either L or M;
Xaa33 is either K or R;	Xaa34 is either A or N;	Xaa35 is either V or I;
Xaa36 is either C or V;	Xaa37 is either S or A;	Xaa38 is either E or D;
Xaa39 is either H or N;	Xaa40 is either A, V or L;	Xaa41 is either K or R; and
Xaa42 is either T, S or A.		